SELECTIVE ENGAGEMENT OF MOTION DETECTION

TECHNICAL FIELD

[0001] The present invention relates generally to portable devices and, more particularly, to portable devices with a motion interface.

BACKGROUND

[0002] The use of computing devices, such as cellular phones and personal digital assistants (PDAs) has grown rapidly. Such devices provide many different functions to users through different types of interfaces, such as keypads and displays. Some computing devices utilize motion as an interface by detecting tilt of the device by a user. Some implementations of a motion interface involve tethering a computing device with fishing lines or carrying large magnetic tracking units that require large amounts of power.

SUMMARY

[0003] In accordance with the present invention, a handheld device with motion a motion interface is provided.

[0004] In accordance with a particular embodiment, a motion controlled handheld device includes a display having a viewable surface and operable to generate an image. The device includes a motion detection module operable to detect motion of the device within three dimensions and to identify components of the motion in relation to the viewable surface. The device also includes a motion response module operable to identify a base reference position, to track the motion of the device in relation to the base reference position, to modify the image in response to the motion, to detect a predetermined pattern of motion of the device, to maintain the image without adjustment during the predetermined pattern of motion, to detect a completion of the predetermined pattern of motion, and to reset the base reference position upon detecting completion of the predetermined pattern of motion.

[0005] In accordance with another embodiment, a method for controlling a handheld device includes generating an image on a viewable surface of the handheld device, detecting motion of the device within three dimensions, identifying components of the motion in relation to the viewable surface, identifying a base reference position and tracking the motion of the device in relation to the base reference position. The method also includes modifying the image in response to the motion, detecting a predetermined pattern of motion of the device, maintaining the image without adjustment during the predetermined pattern of motion, detecting a completion of the predetermined pattern of motion, and resetting the base reference position upon detecting completion of the predetermined pattern of motion.

[0006] Technical advantages of particular embodiments of the present invention include a handheld device capable of allowing a user to navigate across a virtual desktop by repeatedly selectively engaging and disengaging the motion sensitivity of the handheld device to allow greater movement through the virtual desktop in a limited amount of physical space. A particular pattern of motion may be recognized by the device to allow the user to return the device to a position from which future movement will change the information displayed. Accordingly, a user may be able to navigate through a large virtual desktop with utilizing motion interface capability in a limited amount of physical space.

[0007] Other technical advantages will be readily apparent to one skilled in the art from the following figures, description and claims. Moreover, while specific advantages have been enumerated above, various embodiments may include all, some or none of the enumerated advantages.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] For a more complete understanding of particular embodiments of the invention and their advantages, reference is now made to the following descriptions, taken in conjunction with the accompanying drawings, in which:

[0009] FIG. 1 illustrates a handheld device with motion interface capability, in accordance with a particular embodiment;

[0010] FIG. 2 illustrates a motion detector of the handheld device of FIG. 1, in accordance with a particular embodiment;

[0011] FIG. 3 illustrates the use of motion detector components of the handheld device of FIG. 1, in accordance with a particular embodiment;

[0012] FIG. 4 illustrates an example handheld device with motion detection capability, in accordance with a particular embodiment;

[0013] FIG. 5 illustrates an example of selection and amplification of a dominant motion of a handheld device, in accordance with a particular embodiment;

[0014] FIG. 6 is a flowchart illustrating preferred motion selection, in accordance with a particular embodiment;

[0015] FIG. 7 is a flowchart illustrating the setting of a zero-point for a handheld device, in accordance with a particular embodiment;

[0016] FIG. 8 illustrates an example of scrubbing functionality with a handheld device for virtual desktop navigation, in accordance with a particular embodiment;

[0017] FIG. 9 is a flowchart illustrating the scrubbing process of FIG. 8, in accordance with a particular embodiment;

[0018] FIG. 10A illustrates an example of menu navigation using gesture input, in accordance with a particular embodiment;

[0019] FIG. 10B illustrates example gestures which may be used to perform various functions at a handheld device, in accordance with a particular embodiment;

[0020] FIG. 11 illustrates an example of map navigation using motion input, in accordance with a particular embodiment;

[0021] FIG. 12A illustrates a form of motion input cursor navigation, in accordance with a particular embodiment;

[0022] FIG. 12B illustrates another form of motion input cursor navigation, in accordance with a particular embodiment;